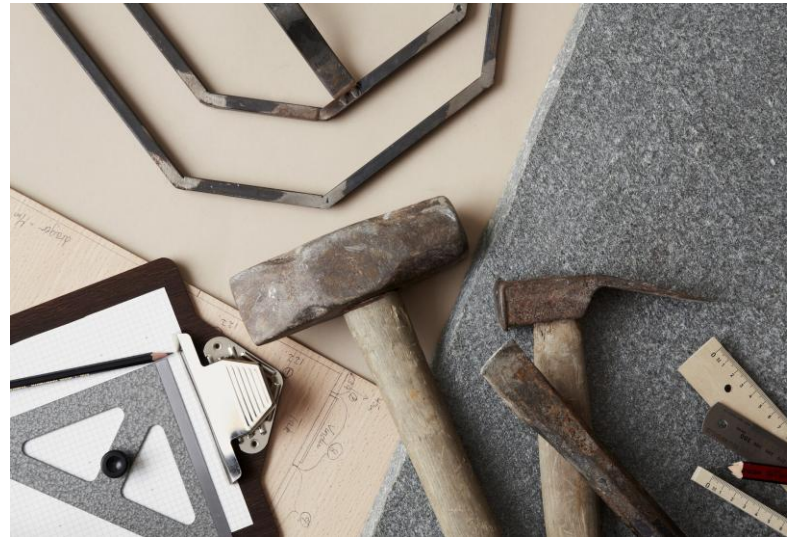


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Natural stone Alta Quartzite, natural cleft surface, sawn edges, thickness adjusted.
Alta Skiferbrudd SA



EPD HUB, HUB-2283

Published on 05.12.2024, last updated on 05.12.2024, valid until 05.12.2029

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Alta Skiferbrudd SA
Address	Strandveien 48, 9513 Alta, NORWAY
Contact details	post@altaskifer.com
Website	https://www.altaskifer.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Tony Holmberg, Alta Skiferbrudd SA
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Imane Uald Iamkaddam, as an authorized verifier acting for EPD Hub Limited

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Natural stone Alta Quartzite, natural cleft surface, sawn edges, thickness adjusted.
Additional labels	-
Product reference	90x (Modular tiles), 91x (Paving slabs) and 92x (Slabs for floors and stairs or cladding)
Place of production	Strandveien 48, 9513 Alta, NORWAY
Period for data	01.01.2022 - 31.12.2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	- %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 ton
Declared unit mass	1000 kg
GWP-fossil, A1-A3 (kgCO₂e)	2,00E+02
GWP-total, A1-A3 (kgCO₂e)	1,91E+02
Secondary material, inputs (%)	0
Secondary material, outputs (%)	79.2
Total energy use, A1-A3 (kWh)	1230
Net freshwater use, A1-A3 (m³)	15.7

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Alta Skiferbrudd SA was founded in 1933. We are the only producer of Alta Quartzite, which is known worldwide for its hardness and strength. We control the whole value chain from raw material to finished product. We produce all our products locally in Alta, Norway.

PRODUCT DESCRIPTION

The Alta Quartzite is a metamorphic rock with sand as origin, which has been created during millions of years with extreme temperatures and enormous pressure. It is the bedrock of Alta, in the north of Norway. Alta Quartzite is not a result of product development or industrial production. Using traditional craft and knowledge, we gather it from the mountains in its original form, following the natural layers of the quartzite. Alta Quartzite has a smooth and comfortable anti-slip surface. Each stone is unique and everlasting – as a piece of art. Alta Quartzite is well known worldwide for its strength and quality. Today our products are just as attractive for interior or exterior use.

This EPD is specific for thickness adjusted materials, which are delivered in a specific nominal thickness e.g. 25 mm.

In the appendix of this EPD there is a scaling table, which represent the GWP fossil A1-A3 / m² (kg Co₂e) for the most common thicknesses.

The mineral composition and some key technical properties can also be found in the appendix

Further information can be found at www.altaskifer.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	
Minerals	100	Norway
Fossil materials	0	
Bio-based materials	0	

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	6.54

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 ton
Mass per declared unit	1000 kg
Functional unit	-
Reference service life	

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm)

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The manufacturing of uncalibrated Alta Quartzite includes roughly 3 stages. The first is the separation of the natural stone from the rock face at the quarry. This is

done by drilling and explosives. After this, the stone block is transported a short distance and then manually split into slabs in various thicknesses from approx. 8-80 mm depending on the splitting layers in each block. The slabs are then transported to the manufacturing site. At the site the slabs are sorted and sawn into the wanted shape and size in thickness intervals without further processing (e.g. thickness interval of 20-30mm, 30-40mm and 40-60 mm). Eventually, the finished product is moved out and transported to the construction site.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions. The transportation distance is defined according to RTS PCR. The preferred method of transport is by sea. The total mass transported is distributed by the shares that are normally transported to various destinations, for practical reasons smaller destinations are combined into nearby main destinations. Vessel and vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality it may vary, but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as product are packaged properly. Also, volume capacity utilization factor is assumed to be 1 for the nested packaged products. Installation of Alta Quartzite slabs and tiles is done in different ways depending on the type of use and product. Some are fixed with cement-based adhesive (e.g. floors and stairs), for façade claddings different fixing solutions is used. Outdoor paving is often mounted on a set layer of loose masses with no adhesive. For practical reasons its calculated for cement-based adhesive.

PRODUCT USE AND MAINTENANCE (B1-B7)

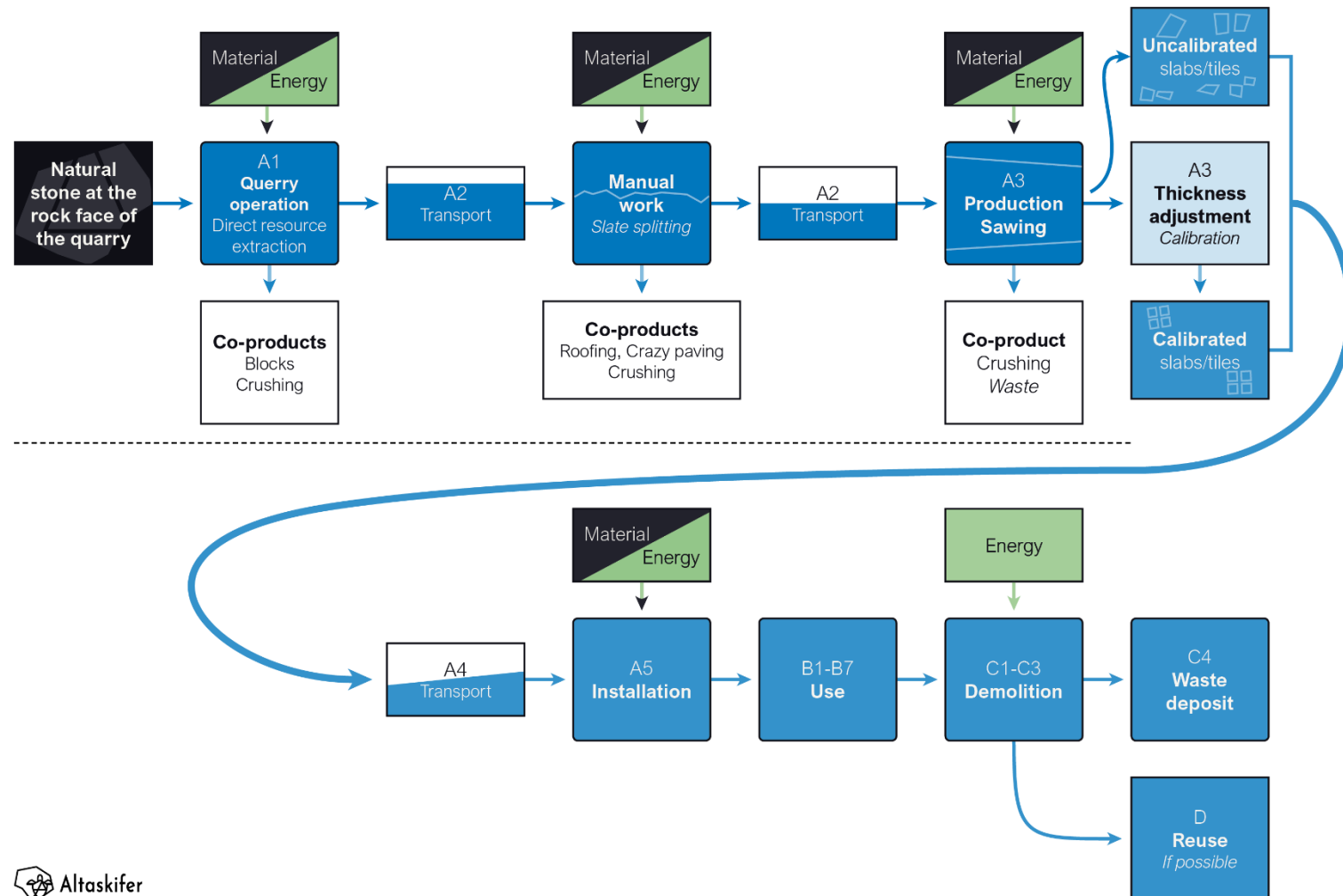
This EPD does not cover the use phase.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Installed Alta Quartzite schist is dismantled in different ways, depending on the type of installation. In this scenario, it is assumed that the schist has been installed with cement-based adhesive and must therefore be spiked. Assumes chisel hammer of 2 kW, uses 1 min on 1 m² surface. Schist that is spiked up is transported 50 km to a landfill for inert waste or used as filling material for various purposes.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	Allocated by mass or volume
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	- %

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	3,30E+00	1,51E+02	3,70E+01	1,91E+02	1,68E+02	8,46E+01	MND	MND	MND	MND	MND	MND	MND	4,67E-03	5,13E+00	8,59E+00	1,15E+00	-2,71E+00
GWP – fossil	kg CO ₂ e	3,30E+00	1,51E+02	4,66E+01	2,00E+02	1,68E+02	5,92E+01	MND	MND	MND	MND	MND	MND	MND	4,63E-03	5,13E+00	8,58E+00	1,15E+00	-5,23E+00
GWP – biogenic	kg CO ₂ e	0,00E+00	0,00E+00	-2,40E+01	-2,40E+01	0,00E+00	2,40E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,52E+00
GWP – LULUC	kg CO ₂ e	6,29E-04	5,55E-02	1,43E+01	1,44E+01	6,18E-02	1,46E+00	MND	MND	MND	MND	MND	MND	MND	3,13E-05	1,89E-03	1,25E-02	2,41E-03	-7,09E-03
Ozone depletion pot.	kg CFC-11e	6,58E-07	3,46E-05	4,43E-06	3,97E-05	3,85E-05	9,00E-06	MND	MND	MND	MND	MND	MND	MND	1,89E-10	1,18E-06	1,50E-06	3,33E-07	-5,78E-07
Acidification potential	mol H ⁺ e	5,82E-02	6,37E-01	2,93E-01	9,88E-01	7,09E-01	2,39E-01	MND	MND	MND	MND	MND	MND	MND	1,57E-05	2,17E-02	6,92E-02	1,03E-02	-4,30E-02
EP-freshwater ²⁾	kg Pe	1,63E-05	1,23E-03	1,76E-03	3,01E-03	1,37E-03	7,33E-04	MND	MND	MND	MND	MND	MND	MND	1,97E-07	4,20E-05	1,74E-04	1,03E-05	-2,70E-04
EP-marine	kg Ne	2,22E-02	1,89E-01	8,75E-02	2,99E-01	2,11E-01	7,09E-02	MND	MND	MND	MND	MND	MND	MND	3,63E-06	6,45E-03	2,56E-02	3,95E-03	-1,08E-02
EP-terrestrial	mol Ne	2,88E-01	2,09E+00	9,61E-01	3,34E+00	2,33E+00	7,92E-01	MND	MND	MND	MND	MND	MND	MND	4,32E-05	7,12E-02	2,81E-01	4,33E-02	-1,40E-01
POCP (“smog”) ³⁾	kg NMVOCe	6,61E-02	6,69E-01	2,83E-01	1,02E+00	7,44E-01	2,35E-01	MND	MND	MND	MND	MND	MND	MND	1,15E-05	2,28E-02	7,81E-02	1,23E-02	-3,42E-02
ADP-minerals & metals ⁴⁾	kg Sbe	5,11E-06	3,53E-04	3,86E-04	7,44E-04	3,93E-04	2,24E-04	MND	MND	MND	MND	MND	MND	MND	2,91E-08	1,20E-05	2,23E-05	2,37E-06	-6,91E-05
ADP-fossil resources	MJ	4,29E+01	2,26E+03	6,27E+02	2,93E+03	2,52E+03	6,69E+02	MND	MND	MND	MND	MND	MND	MND	9,18E-02	7,70E+01	1,28E+02	2,25E+01	-8,91E+01
Water use ⁵⁾	m ³ e depr.	2,24E-01	1,01E+01	6,60E+02	6,70E+02	1,13E+01	7,12E+01	MND	MND	MND	MND	MND	MND	MND	2,97E-01	3,45E-01	1,06E+00	8,04E-02	-1,49E+01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1,04E-06	1,73E-05	5,61E-06	2,40E-05	1,93E-05	5,04E-06	MND	MND	MND	MND	MND	MND	MND	2,32E-10	5,91E-07	8,04E-06	9,18E-07	-8,75E-07
Ionizing radiation ⁶⁾	kBq U235e	1,93E-01	1,08E+01	6,64E+00	1,76E+01	1,20E+01	3,77E+00	MND	MND	MND	MND	MND	MND	MND	4,26E-03	3,67E-01	8,06E-01	1,04E-01	-1,88E+00
Ecotoxicity (freshwater)	CTUe	1,73E+03	2,03E+03	9,00E+02	4,67E+03	2,26E+03	9,53E+02	MND	MND	MND	MND	MND	MND	MND	8,09E-02	6,93E+01	1,18E+02	1,59E+01	-1,30E+02
Human toxicity, cancer	CTUh	1,17E-09	5,00E-08	1,41E-07	1,92E-07	5,56E-08	3,05E-08	MND	MND	MND	MND	MND	MND	MND	5,93E-12	1,70E-09	3,89E-09	4,97E-10	-7,15E-09
Human tox. non-cancer	CTUh	2,73E-08	2,01E-06	1,33E-06	3,37E-06	2,24E-06	7,60E-07	MND	MND	MND	MND	MND	MND	MND	5,96E-11	6,86E-08	8,00E-08	1,20E-08	-1,07E-07
SQP ⁷⁾	-	6,20E+00	2,60E+03	1,92E+02	2,80E+03	2,90E+03	7,03E+02	MND	MND	MND	MND	MND	MND	MND	2,95E-02	8,87E+01	1,10E+02	3,30E+01	-1,38E+02

6) EN 15804+A2 disclaimer for ionizing radiation, human health. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	4,33E-01	2,55E+01	1,50E+03	1,52E+03	2,83E+01	1,63E+02	MND	MND	MND	MND	MND	MND	MND	9,49E-01	8,67E-01	5,19E+00	2,37E-01	-3,94E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,47E+02	3,47E+02	0,00E+00	-3,47E+02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,76E+01
Total use of renew. PER	MJ	4,33E-01	2,55E+01	1,84E+03	1,87E+03	2,83E+01	-1,84E+02	MND	MND	MND	MND	MND	MND	MND	9,49E-01	8,67E-01	5,19E+00	2,37E-01	-2,18E+01
Non-re. PER as energy	MJ	4,29E+01	2,26E+03	6,17E+02	2,92E+03	2,52E+03	6,68E+02	MND	MND	MND	MND	MND	MND	MND	9,15E-02	7,70E+01	1,28E+02	2,26E+01	-8,70E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	5,39E+00	5,39E+00	0,00E+00	-5,39E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,65E+00
Total use of non-re. PER	MJ	4,29E+01	2,26E+03	6,23E+02	2,93E+03	2,52E+03	6,63E+02	MND	MND	MND	MND	MND	MND	MND	9,15E-02	7,70E+01	1,28E+02	2,26E+01	-7,94E+01
Secondary materials	kg	1,72E-02	6,28E-01	1,93E+00	2,58E+00	6,99E-01	3,60E-01	MND	MND	MND	MND	MND	MND	MND	6,82E-05	2,14E-02	4,48E-02	6,85E-03	-6,49E-02
Renew. secondary fuels	MJ	2,80E-04	6,33E-03	3,36E-01	3,43E-01	7,05E-03	3,55E-02	MND	MND	MND	MND	MND	MND	MND	1,61E-07	2,16E-04	5,60E-04	9,77E-05	-8,50E-04
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	4,29E-02	4,29E-02	0,00E+00	4,29E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	5,09E-03	2,93E-01	1,54E+01	1,57E+01	3,26E-01	1,74E+00	MND	MND	MND	MND	MND	MND	MND	6,96E-03	9,97E-03	5,56E-02	1,56E-02	-3,56E-01

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	8,09E-02	3,00E+00	5,54E+00	8,62E+00	3,34E+00	1,64E+00	MND	MND	MND	MND	MND	MND	MND	4,71E-04	1,02E-01	3,69E-01	2,98E-02	-4,74E-01
Non-hazardous waste	kg	6,08E-01	4,93E+01	7,85E+02	8,35E+02	5,48E+01	2,16E+02	MND	MND	MND	MND	MND	MND	MND	9,06E-03	1,68E+00	1,28E+02	1,20E+02	-1,25E+01
Radioactive waste	kg	2,90E-04	1,51E-02	2,94E-03	1,84E-02	1,68E-02	4,12E-03	MND	MND	MND	MND	MND	MND	MND	9,72E-07	5,15E-04	7,38E-04	1,52E-04	-6,32E-04

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	9,88E-01	9,88E-01	0,00E+00	6,97E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	8,80E+02	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	5,69E-02	5,69E-02	0,00E+00	6,57E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	9,05E+00	9,05E+00	0,00E+00	3,89E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	3,25E+00	1,49E+02	6,07E+01	2,13E+02	1,66E+02	6,06E+01	MND	MND	MND	MND	MND	MND	MND	4,66E-03	5,07E+00	8,46E+00	1,14E+00	-5,15E+00
Ozone depletion Pot.	kg CFC-11e	5,22E-07	2,74E-05	3,50E-06	3,14E-05	3,05E-05	7,14E-06	MND	MND	MND	MND	MND	MND	MND	1,61E-10	9,34E-07	1,19E-06	2,64E-07	-4,80E-07
Acidification	kg SO ₂ e	3,90E-02	4,95E-01	2,12E-01	7,46E-01	5,51E-01	1,82E-01	MND	MND	MND	MND	MND	MND	MND	1,23E-05	1,69E-02	5,16E-02	7,58E-03	-3,25E-02
Eutrophication	kg PO ₄ ³ e	9,40E-03	1,13E-01	1,01E-01	2,23E-01	1,26E-01	7,54E-02	MND	MND	MND	MND	MND	MND	MND	8,55E-06	3,84E-03	1,49E-02	1,73E-03	-1,37E-02
POCP ("smog")	kg C ₂ H ₄ e	6,65E-04	1,93E-02	1,18E-02	3,18E-02	2,15E-02	7,46E-03	MND	MND	MND	MND	MND	MND	MND	6,60E-07	6,58E-04	1,55E-03	2,53E-04	-1,59E-03
ADP-elements	kg Sbe	5,05E-06	3,42E-04	3,39E-04	6,86E-04	3,80E-04	1,78E-04	MND	MND	MND	MND	MND	MND	MND	2,76E-08	1,16E-05	2,20E-05	2,32E-06	-6,83E-05
ADP-fossil	MJ	4,29E+01	2,26E+03	5,97E+02	2,90E+03	2,52E+03	6,66E+02	MND	MND	MND	MND	MND	MND	MND	9,15E-02	7,70E+01	1,28E+02	2,25E+01	-8,90E+01

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Imane Uald Iamkaddam, as an authorized verifier acting for EPD Hub Limited
05.12.2024



APPENDIX

SCALING TABLE FOR ALTA QUARTZIT, THICKNESS ADJUSTED

Product reference / (identification)	Weight (kg/m ²)	Thickness (mm average)	GWP fossil A1- A3 (kg Co2e)/m ²	GWP fossil A1-A3 (kg Co2e) /ton
Modular tiles (15 mm) / (901515x)	40,5	15	8,1	200
Paving / Slabs for floor and stairs or cladding (20 mm) / (912020x / 922020x)	54	20	10,8	200
Paving / Slabs for floor and stairs or cladding (25 mm) / (912525x / 922525x)	67,5	25	13,5	200
Paving / Slabs for floor and stairs or cladding (30 mm) / (913030x / 923030x)	81	30	16,2	200
Paving / Slabs for floor and stairs or cladding (40 mm) / (914040x / 924040x)	108	40	21,6	200
Paving / Slabs for floor and stairs or cladding (50 mm) / (915050x / 925050x)	135	50	27	200

TECHNICAL PROPERTIES

Values are mean value		Schist from Alta
Petrography	NS-EN 12407	Quartzite schist
Density	NS-EN 1936	2694 kg/m ³
Water absorption (Frost resistance)	NS-EN 13775	0,1 % weight
Flexural strength	NS-EN 12372	52,7 MPa
Compressive strength	NS-EN 1926	346 MPa
Slip resistance, riven SRV dry	NS-EN 14231, NS-EN 1341	79
Slip resistance, riven SRV wet	NS-EN 14231, NS-EN 1341	43
Breaking load at dowel hole	NS-EN 13364	5307 N
Abrasion resistance	NS-EN 14157 (A)	18 mm

MINERAL COMPOSITION

Petrographic composition (NS-EN 12407)	Share - %
Natural stone, Alta Quartzite, 1000 kg	100 %
Quartz	32 %
Microcline feldspar	35 %
Plagioclase feldspar	5 %
Muscovite mica	20 %
Epidote	3 %
Titanite	2 %
Magnetite, hematite, ilmenite	3 %
Calcite	Accessory